

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) Spot welding tongs for robotic applications for the resistance welding of workpieces comprising:

a base body;

an actuating means;

electrodes;

electrode holders for holding said at least two electrodes;

a strip for protection of at least one of said electrodes;

~~a plurality of~~ tong arms which are each pivotally mounted on ~~a~~ said base body and adjustable by ~~an~~ said actuating means and to which said electrode holders ~~for the~~ said electrodes are fastened, and further including winding means comprising a wind-off roller and a wind-up roller coupled to at least one tong arm of said tong arms, said wind off roller and wind up roller for winding off and on a said strip for the protections of at least one electrode of said electrodes,

wherein the wind-off roller and the wind-up roller of the winding means are arranged on the base body or on ~~the~~ at least one tong arm of said tong arms, and that at least one guiding

groove comprising a recess is provided on ~~the~~ said at least one tong arm and on the electrode holder for the guidance of the strip along ~~the~~ said at least one tong arm;

a pressure element arranged in the region of an electrode cap of ~~the~~ at least one electrode of said electrodes; and

a spacer coupled to said pressure element, said spacer configured to selectively space said strip from said at least one electrode, wherein said pressure element and said spacer comprise at least one guiding groove for guiding said strip around said at least one electrode wherein said spacer and said pressure element are configured to lift said strip from said at least one electrode during or after an opening of the spot welding tongs to protect said at least one electrode and wherein the spacer and the pressure element are movable relative to said at least one electrode of said electrodes.

Claim 2 (Currently Amended): Spot welding tongs according to claim 1, wherein means for guiding and deflecting the strip, in particular deflection pulleys and slide surface, are provided on ~~the~~ said at least one tong arm ~~and/or~~ or said at least one electrode holder.

Claim 3 (Currently Amended): Spot welding tongs according to claim 1, wherein ~~the~~ said wind-off roller and/or the wind-up roller is coupled with a driving means and, in particular, an electronically activatable motor.

Claim 4 (Currently Amended): Spot welding tongs according to claim 1, wherein the ~~tong arm is formed by a base section, and that side pieces are arranged on either side of the base~~ section to project beyond the base section, and thus formed depression is designed as a guiding groove for the strip.

Claim 5 (Previously Presented): Spot welding tongs according to claim 4, wherein at least one cover plate is arranged on the end sides of the side pieces to cover the guiding groove formed between the side pieces.

Claim 6 (Previously Presented): Spot welding tongs according to claim 1, wherein the tong arm is formed by a base section with the guiding groove being incorporated in the base section.

Claim 7 (Previously Presented): Spot welding tongs according to claim 1, wherein the guiding groove is formed by additional guiding elements which are provided, for instance slipped or screwed, on the tong arm and/or electrode holder.

Claim 8 (Previously Presented): Spot welding tongs according to claim 1, wherein the tong arm is comprised of several individual components which are connected with one another in a manner that a hollow space is formed in the center of the tong arm for the guidance of the strip.

Claim 9 (Previously Presented) Spot welding tongs according to claim 1, wherein a braking device is provided to fix and stretch the strip.

Claim 10 (Previously Presented) Spot welding tongs according to claim 9, wherein the braking device is connected with a control unit.

Claims 11-18 (Canceled).

Claim 19 (Currently Amended): Spot welding tongs comprising:

~~a plurality of~~ tong arms;

a base body wherein said ~~plurality of~~ tong arms are each pivotally mounted on said base body;

an actuating means, wherein said tong arms are adjustable by said actuating means;

~~a plurality of~~ electrode holders;

~~a plurality of~~ electrodes wherein at least one electrode of said ~~plurality of~~ electrodes is

fastened to at least one of said ~~plurality of~~ electrode holders and wherein at least one electrode has an electrode cap;

a strip;

a winding mechanism coupled to the base body, and comprising a wind-off roller and a wind-up roller for winding off and on said strip for the protection of at least one electrode of said ~~plurality of~~ electrodes wherein said wind-off roller and said wind-up roller of the winding mechanism are arranged on and coupled to said base body;

at least one guiding groove comprising a recess disposed on at least one of said tong arms for the guidance of said strip along said at least one tong arm, and wherein said at least one guiding groove, extends onto ~~said~~ at least one electrode holder of said electrode holders to guide said strip around said at least one electrode;

a pressure element arranged in the region of said electrode cap of the at least one electrode; and

a spacer coupled to said pressure element, said spacer configured to selectively space said strip from said at least one electrode, wherein said pressure element and said spacer comprise at least one guiding groove for guiding said strip around said at least one electrode wherein said spacer and said pressure element are configured to lift said strip from said electrode during or

after opening of the spot welding tong to protect said at least one electrode and are movable relative to said at least one electrode.

20. (Canceled).

Claim 21 (Currently Amended): Spot welding tongs comprising:

a plurality of tong arms;

a base body wherein said plurality of tong arms are each pivotally mounted on said base body;

an actuator, wherein said tong arms are adjustable by said actuator;

a plurality of electrode holders;

a plurality of electrodes wherein at least one electrode of said plurality of electrodes is fastened to at least one of said plurality of electrode holders and wherein at least one electrode has an electrode cap;

a strip;

a winding mechanism coupled to the base body and comprising a wind-off roller and a wind-up roller for winding off and on said strip for the protection of at least one electrode of said plurality of electrodes wherein said wind-off roller and said wind-up roller of the winding mechanism are arranged on and coupled to said base body;

at least one guiding groove comprising a recess disposed on said electrode holder for the guidance of said strip and wherein said guiding groove extends on said plurality of tong arms to guide said strip on said tong arms;

a pressure element arranged in the region of an electrode cap of the at least one electrode;
and

a spacer coupled to said pressure element, said spacer configured to selectively space said strip from said electrode, wherein said pressure element and said spacer comprise at least one guiding groove for guiding said strip around said at least one electrode wherein said spacer and said pressure element are configured to lift said strip from said electrode during or after opening of the spot welding tong to protect said at least one electrode and are movable relative to said at least one electrode.

22. (Previously Presented) The spot welding tongs as in claim 1, further comprising:

a means for protecting electrodes comprising:

said pressure element arranged in the region of an electrode cap of the at least one electrode;

said spacer coupled to said pressure element, said spacer configured to space said strip from said electrode, wherein said pressure element and said spacer comprise at least one guiding groove for guiding said strip around said at least one electrode.

23. (Previously Presented) The spot welding tongs as in claim 19, further comprising:

a means for protecting said electrodes comprising:

a said pressure element arranged in the region of an electrode cap of the at least one electrode;

a said spacer coupled to said pressure element, said spacer configured to space said strip from said electrode, wherein said pressure element and said spacer comprise at least one guiding groove for guiding said strip around said at least one electrode.

24. (Canceled)

25. (Previously Presented) The spot welding tongs as in claim 1, wherein said spacer is configured to lift said strip off of the electrode cap during or after the opening of the spot welding tongs and said spacer is configured to be pushed back during a welding process.

26. (Previously Presented) The spot welding tongs as in claim 19, wherein said spacer is configured to lift said strip off of the electrode cap during or after the opening of the spot welding tongs and said spacer is configured to be pushed back during a welding process.

27. (Previously Presented) The spot welding tongs as in claim 21, wherein said spacer is configured to lift said strip off of the electrode cap during or after the opening of the spot welding tongs and said spacer is configured to be pushed back during a welding process.

28. (Previously Presented) The spot welding tongs as in claim 21, wherein said actuator comprises a servomotor.

29. (Previously Presented) The spot welding tongs as in claim 21 wherein said actuator comprises a cylinder.